

AMENDMENTS TO THE CLAIMS:

The following listing of claims replaces all prior listings, and all prior versions, of claims in the above-identified application.

LISTING OF CLAIMS:

1. (Previously presented) A method for cleaning processing a plasma processing apparatus having a plasma generating means for generating plasma within a processing chamber, a high-frequency power applying means for applying high-frequency power to an object to be processed, a processing chamber to which an evacuating device is connected and which has its interior evacuated, and a gas supply device for the processing chamber, said method comprising:

mounting a Si wafer on an electrode for holding the object to be processed, introducing hydrobromic gas and chlorine gas into the processing chamber and generating plasma, and removing an aluminum fluoride deposit adhered to the interior of the processing chamber by applying the high-frequency power to the Si wafer.

2. (Cancelled).

3. (Currently amended) A method for cleaning processing a plasma processing apparatus for generating a plasma in a vacuum container of the plasma processing apparatus and plasma processing a substrate placed on a substrate holder disposed within the vacuum container, comprising:

providing a period for cleaning an aluminum fluoride deposit in the vacuum container by generating plasma containing chlorine gas and hydrobromic gas and an element that reacts with fluorine to create a gas-phase reaction product either each

time after plasma processing a wafer or plural wafers or before and after plasma processing.

4. – 7. (Cancelled).

8. (Previously presented) The method for cleaning processing a plasma processing apparatus according to claim 3, further comprising placing a Si wafer, with no patterns printed thereon, on the substrate holder when the plasma including chlorine gas and hydrobromic gas is discharged, and applying high-frequency power to the Si wafer through the substrate holder.

9. (Previously presented) The method for cleaning processing a plasma processing apparatus according to claim 3, further comprising placing a Si wafer, with no patterns printed thereon, on the substrate holder when the plasma including chlorine gas and hydrobromic gas is discharged, and applying high-frequency power to the Si wafer through the substrate holder, wherein the high-frequency power being applied corresponds to a frequency of 400 kHz and is equal to or greater than 0.11 W per unit area (1 cm^2) of the Si wafer.

10. (Previously presented) The method for cleaning processing a plasma processing apparatus according to claim 3, wherein

a ratio of an area of an earth to the area of an inner wall of the vacuum container in contact with plasma is 40 % or more.

11. and 12. (Cancelled).

13. (Previously presented) The method for cleaning processing a plasma processing apparatus according to claim 3, wherein

N₂, CO, CO₂, H₂ or SO₂ is supplied simultaneously with the chlorine gas and the hydrobromic gas contained in the plasma gas.

14. (Previously presented) The method for cleaning processing a plasma processing apparatus according to claim 3, further comprising:

providing a period for generating plasma containing SF₆ prior to said period for generating plasma with the chlorine gas and hydrobromic gas.

15. (Previously presented) The method for cleaning processing a plasma processing apparatus according to claim 3, wherein said plasma containing chlorine gas and hydrobromine gas additionally contains Si, to create the gas phase reaction product.

16. (Previously presented) The method for cleaning processing a plasma processing apparatus according to claim 3, wherein a portion of material constituting the vacuum container includes Si, and the cleaning processing for cleaning the aluminum fluoride deposit in the vacuum container is performed using the chlorine gas and the hydrobromic gas.

17. (Previously presented) The method for cleaning processing a plasma processing apparatus according to claim 3, wherein the plasma containing chlorine gas and hydrobromic gas, used in the cleaning processing, additionally contains SiCl₄ gas.